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avives@eresmas.net

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Nupponen, K.

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Nupponen, sp. n. (Lepidoptera: Scythrididae)

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Notes on Scythrididae from southern and western Kazakhstan, with description of *Scythris aralensis* Nupponen, sp. n. (Lepidoptera: Scythrididae)

K. Nupponen

Abstract

A list of 24 species embracing 803 specimens of the family Scythrididae from southern and western Kazakhstan is presented. The material was collected between 8-V / 5-VI-2011 and 7-IX / 26-IX-2011. *Scythris aralensis* Nupponen, sp. n. is described, as well as the previously unknown females of *Falkovitshella mongholica* (Passerin d'Entrèves & Roggero, 2006), *Scythris karvoneni* Nupponen, 2010, *S. lycii* Falkovitsh, 1969, *S. sachkovi* Passerin d'Entrèves & Roggero, 2006 and *S. salinella* Nupponen, 2011. Ten species are reported as new to Kazakhstan. The known distribution range of each species is given.

KEY WORDS: Lepidoptera, Scythrididae, new species, new records, Turanian region, Kazakhstan.

Notas sobre Scythrididae del sur y oeste de Kazakhstán, con descripción de *Scythris aralensis* Nupponen, sp. n. (Lepidoptera: Scythrididae)

Resumen

Se presenta una lista de 24 especies con un total de 803 especímenes de la familia Scythrididae del sur y oeste de Kazajstán. El material fue capturado entre el 8-V / 5-VI-2011 y entre el 7-IX / 26-IX-2011. Se describe *Scythris aralensis* Nupponen, sp. n., también como las hembras hasta ahora desconocidas de *Falkovitshella mongholica* (Passerin d'Entrèves & Roggero, 2006), *Scythris karvoneni* Nupponen, 2010, *S. lycii* Falkovitsh, 1969, *S. sachkovi* Passerin d'Entrèves & Roggero, 2006 y *S. salinella* Nupponen, 2011. Diez especies se citan como nuevas para Kazakhstán. Se da la distribución conocida de cada especie.

PALABRAS CLAVE: Lepidoptera, Scythrididae, nueva especie, primeras citas, región de Turania, Kazajstán.

Introduction

The scythridid fauna of the Turanian region was subsequently treated and published data on the subject listed by NUPPONEN (2009, 2010, 2011). The present article is based on new materials of Scythrididae collected during two Finnish-Russian expeditions in southern and western Kazakhstan in May-June and September 2011.

Material and methods

The Finnish-Russian expeditions to Kazakhstan were made during 8-V / 5-VI-2011 and 7-IX / 26-IX-2011. The investigated area during the spring trip covered a large area in the southern and western

part of the country, the Ustyurt plateau, north shore of the Aral Sea, the Barsuki desert and the Emba River basin. In the autumn, a few specimens of scythridids were discovered in Turkestan, the Karatau Mountains and NE Kyzylkum desert. The habitats at collecting sites were mainly various kinds of deserts and semideserts at low altitudes.

Altogether 24 species embracing 803 specimens of scythridids were recorded during the trips. The majority of the material was collected by artificial light at night. A few specimens were recorded by netting during daytime.

List of scythridid species

The species are listed alphabetically in generic and specific order. The known distribution of each species is given.

Apostibes griseolineata Walsingham, 1907

SW Kazakhstan, 42° 36' 25-35" N 54° 08' 35-59" E, 0-47 m, Ustyurt Nature Reserve, Onere spring, 16-V-2011, 20 ♂♂, 17-V-2011, 11 ♂♂, K. Nupponen leg.

Distribution: Afghanistan, Algeria, Israel, Kazakhstan, Libya, Saudi-Arabia, Tajikistan, Tunisia, Uzbekistan.

Falkovitshella asthena (Falkovitsh, 1972)

SW Kazakhstan, 42° 56' 54" N 54° 05' 35" E, 75 m, Karynzharyk sands near Akkuduk village, 14-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 22" N 54° 39' 02" E, 90 m, Ustyurt Nature Reserve, Kendyrlı, 19-V-2011, 2 ♂♂, 2 ♀♀, K. Nupponen leg.; SW Kazakhstan, 45° 30' 20" N 55° 17' 07" E, 110 m, Beineu town 18 km N, 28-V-2011, 2 ♂♂, K. Nupponen leg.; Kazakhstan, 46° 20' 21" N 59° 41' 49" E, 45 m, Aral Sea, N shore, Tamshima well, 30-V-2011, 4 ♂♂, 15 ♀♀, K. Nupponen leg. 21 genitalia preparations preserved in glycerol in needle.

Distribution: Kazakhstan, Turkmenistan, Uzbekistan.

Falkovitshella mongholica (Passerin d'Entrèves & Roggero, 2006)

Kazakhstan, 46° 20' 21" N 59° 41' 49" E, 45 m, Aral Sea, N shore, Tamshima well, 30-V-2011, 1 ♂, 1 ♀, K. Nupponen leg. Genitalia slides: K. Nupponen prep. no. 3/30-I-2012 ♀, 4/30-I-2012 ♂.

Distribution: Kazakhstan, Mongolia, Uzbekistan.

Remarks: The present records extend the known distribution range of *F. mongholica* considerably to the west. **New to Kazakhstan.** The previously unknown female genitalia of the species are illustrated and described below, and the external appearance of the moth is illustrated for the first time (Fig. 7).

Female genitalia (Fig. 14): Sterigma oval with shallow oblique mediolateral flaps; round medial part less sclerotized, at middle a small digitate process. Sternum VII subrectangular, 1.25 x wider than high; posterior margin medially concave; anterior margin shallowly concave; sub-anteriorly a long transverse sclerotization. Apophyses anteriores 0.9 x length of apophyses posteriores.

Scythris aralensis Nupponen, sp. n.

Type material. Holotype: ♂ (Fig. 8): SW Kazakhstan, 43° 24' 27" N 54° 33' 34" E, 80 m, Ustyurt Nature Reserve, Mametkazgan, 22-V-2011, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 1/30-I-2012. In coll. T. & K. Nupponen.

Paratype 1 ♂: Kazakhstan, 46° 19' 53" N 59° 41' 36" E, 35 m, Aral Sea, dunes at N shore, Tamshima well, 31-V-2011, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 6/8-I-2012. In coll. T. & K. Nupponen.

Diagnosis: Externally *S. aralensis* Nupponen, sp. n. is quite easy to separate from other described

Turanian species of the *canescens* species-group sensu lato by its pale and indistinctly patterned forewings. It resembles some North African species, like *S. biskraensis* Bengtsson, 1997 and *S. cupellella* Bengtsson, 1997, but the distribution range of those species is restricted to the Maghreb area. The male genitalia of *S. aralensis* indicate its close relationship to *Falkovitshella asema* (Falkovitsh, 1972), *F. asthena* (Falkovitsh, 1972), *F. hypolepta* (Falkovitsh, 1972), *S. karvoneni* K. Nupponen, 2010, and two still undescribed species from Pakistan and Iran (BENGTTSSON, in prep.). These species are readily separated from each other by shape, position and amount of processes and flaps in the valvae, as well as by shape of tergum VIII (see FALKOVITSH, 1972; NUPPONEN, 2010).

Description: Wingspan 9.5-10 mm. Head, collar, haustellum and scape creamy white, neck tuft thorax slightly darker. Labial palp creamy white, except outer surface of segments II and III medially pale brown. Legs creamy white, tarsus and tibia mixed with pale brown. Abdomen pale fuscous, ventrally mixed with creamy white; anal tuft creamy white. Forewing creamy white; scattered pale brown scales exist over the wing, more densely above fold and in apical area, defining three indistinct spots in fold at 0.3, 0.45 and 0.6; indistinct brown spot at cell end. Hindwing whitish fuscous.

Male genitalia (Figs. 15-16): Uncus stout, basally straight; distal portion wide, heart-shaped, medioposterior incision widely V-shaped. Gnathos base wide, laterally at each side a round extension directed upwards; distal arm attached to base by sclerotized band, shorter than uncus, basal half tapered, distal half slender and bent downwards, tip pointed. Aedeagus 0.65 x length of right valva, rather slender and slightly bent, distally curved 80°, distal half tapered a little. Valvae slightly asymmetrical, broad with longitudinal fold, somewhat widening terminally, at 0.6 of dorsal margin a broad, hairy and triangular extension directed downwards; ventral margin incurved at 0.4, distal 0.6 straight; valvae apically somewhat extended, left valva dorsally and right valva ventrally; dorsal margin of right valva with a subapical notch. Vinculum quadrangular, as wide as base of valva. Sternum VIII pentagonal, anterior margin concave; medioposteriorly a small digitate process, surrounded by a weakly sclerotized rectangular extension, at middle a sclerotized transverse reinforcement. Tergum VIII subrectangular, twice higher than wide, anterior margin arched.

Female genitalia: Unknown.

Bionomy: The specimens came to artificial light at night in late May. The habitat in Mametkazgan is a desert with calcareous slopes and patches of saline soil (Fig. 2). Another locality is an edge between sand dunes, *Phragmites* stands and saline soil at former bottom of the Aral Sea, supporting halophytic vegetation (Fig. 1).

Distribution: W Kazakhstan.

Etymology: The species name refers to the locality on the shore of the Aral Sea where the paratype specimen was found, and respects the memory of the declining lake.

Remarks: The establishment of the genus *Falkovitshella* Passerin d'Entrèves & Roggero, 2007 is based on a few diagnostic characters in the male genitalia without true phylogenetic framework. All species displaying these characters have not been included in the original description of the genus whose boundaries remain unclear. On the other hand, some species included in *Falkovitshella* do not fulfill the criteria given for the genus in the original description, e.g. the valvae of *F. asthena* are asymmetrical. If the genus *Falkovitshella* is accepted a valid genus as such, the genus *Scythris* becomes paraphyletic. In my opinion, a phylogenetic framework for the genus *Scythris* as a whole, supported by the DNA barcodes, is obligatory until it becomes appropriate to split it into smaller genera. *S. aralensis* Nupponen, sp. n. is tentatively placed in the *canescens*-group of the genus *Scythris*. For further notes on the group and the genus *Falkovitshella*, see BENGTTSSON (1997), PASSERIN d'ENTRÈVES & ROGGERO (2007) and NUPPONEN (2009).

Scythris astragali Falkovitsh, 1969

Kazakhstan, 46° 17' 13" N 58° 50' 35" E, 130 m, S Barsuki desert, near Bozoi village, 1-VI-2011, 2 ♂♂, K. Nupponen leg. One genitalia preparation preserved in glycerol in needle.

Distribution: Kazakhstan, Turkmenistan, Uzbekistan.

Remarks: The present records extend the known distribution range of *S. astragali* considerably to

the northwest. **New to Kazakhstan.** FALKOVITSH (2011) described a monotypic genus *Belophora*, comprising *B. astragali* (Flkv.) alone. The description is based on a limited material preserved in the Zoological Institute of the Russian Academy of Sciences, St. Petersburg. However, four species evidently belonging to the same species group (see NUPPONEN 2011) were not included in the new genus. If the genus *Belophora* is accepted as such, the genus *Scythris* becomes paraphyletic. Therefore, I prefer to keep the status of *S. astragali* unchanged until a phylogenetic framework for the genus *Scythris* as a whole is available.

Scythris bagdadiella Amsel, 1949

Kazakhstan, 46° 19' 53" N 59° 41' 36" E, 35 m, Aral Sea, dunes at N shore, Tamshima well, 31-V-2011, 1 ♂, K. Nupponen leg.

Distribution: Afghanistan, Algeria, Iraq, Kazakhstan, Russia (S. Ural), Turkey, Uzbekistan.

Scythris caballoides Nupponen, 2009

Kazakhstan, 47° 37' 43" N 59° 31' 14" E, 190 m, N Barsuki desert, Chelkar settlement 25 km S, 2-VI-2011, 1 ♂, 1 ♀, 3-VI-2011, 1 ♂, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 4/8-I-2012 ♂.

Distribution: Kazakhstan, Uzbekistan.

Remarks: *S. caballoides* is previously known only from a restricted area in the tugai forests of the Syr-Darya valley. The present records extend the known distribution range of the species considerably to the northwest. Compared to material from Syr-Darya valley (see NUPPONEN, 2009, 2010, 2011), the present specimens are smaller in size and darker (Fig. 9). The habitat in the Barsuki desert is a sand dune region with moist patches between the dunes (Fig. 4).

Scythris caroxylella Falkovitsh, 1969

SW Kazakhstan, 42° 36' 25-35" N 54° 08' 35-59" E, 0-47 m, Ustyurt Nature Reserve, Onere spring, 17-V-2011, 2 ♂♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 22" N 54° 39' 02" E, 90 m, Ustyurt Nature Reserve, Kendyrli, 19-V-2011, 2 ♂♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 23" N 54° 41' 21" E, 115 m, Ustyurt Nature Reserve, Kendyrli, 20-V-2011, 4 ♂♂, K. Nupponen leg.; SW Kazakhstan, 43° 24' 27" N 54° 33' 34" E, 80 m, Ustyurt Nature Reserve, Mametkazgan, 22-V-2011, 6 ♂♂, 1 ♀, K. Nupponen leg.; SW Kazakhstan, 43° 07' 07" N 54° 11' 33" E, 85 m, Akkuduk Village 20 km N, Karynzhyrlyk sands, Tynyshtyk, 23-V-2011, 18 ♂♂, 2 ♀♀, K. Nupponen leg.; SW Kazakhstan, 43° 31' 00" N 51° 53' 20" E, 20 m, slopes by Karagie salt lake, 25-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 43° 39' 58" N 53° 08' 17" E, 160 m, Zhana-Uzen town 45 km NE, Bostankum sands, 26-V-2011, 2 ♂♂, K. Nupponen leg.; SW Kazakhstan, 43° 48' 45" N 53° 31' 29" E, 70 m, Sengirkum sands, Terekurpa well, 27-V-2011, 2 ♂♂, K. Nupponen leg.; SW Kazakhstan, 45° 30' 20" N 55° 17' 07" E, 110 m, Beineu town 18 km N, 28-V-2011, 16 ♂♂, 1 ♀, K. Nupponen leg.; Kazakhstan, 46° 20' 21" N 59° 41' 49" E, 45 m, Aral Sea, N shore, Tamshima well, 30-V-2011, 1 ♂, K. Nupponen leg.; Kazakhstan, 46° 19' 53" N 59° 41' 36" E, 35 m, Aral Sea, dunes at N shore, Tamshima well, 31-V-2011, 1 ♂, K. Nupponen leg.; Kazakhstan, 46° 17' 13" N 58° 50' 35" E, 130 m, S Barsuki desert, near Bozoi village, 1-VI-2011, 1 ♂, K. Nupponen leg. Five genitalia preparations preserved in glycerol in needle.

Distribution: Kazakhstan, Tajikistan, Uzbekistan.

Scythris cirra Falkovitsh, 1969

SW Kazakhstan, 42° 36' 25-35" N 54° 08' 35-59" E, 0-47 m, Ustyurt Nature Reserve, Onere spring, 16-V-2011, 7 ♂♂, 17-V-2011, 11 ♂♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 22" N 54° 39' 02" E, 90 m, Ustyurt Nature Reserve, Kendyrli, 19-V-2011, 2 ♂♂, 1 ♀, K. Nupponen leg.; Kazakhstan, 46° 20' 21" N 59° 41' 49" E, 45 m, Aral Sea, N shore, Tamshima well, 30-V-2011, 19 ♂♂, 4 ♀♀, K. Nupponen leg.; Kazakhstan, 47° 37' 43" N 59° 31' 14" E, 190 m, N Barsuki desert, Chelkar settlement 25 km S, 3-VI-2011, 1 ♂, K. Nupponen leg.

Distribution: Kazakhstan, Kyrgyzstan, Mongolia, Turkmenistan, Uzbekistan.

Scythis deresella Falkovitsh, 1969

SW Kazakhstan, 42° 36' 25-35" N 54° 08' 35-59" E, 0-47 m, Ustyurt Nature Reserve, Onere spring, 17-V-2011, 3 ♂♂, K. Nupponen leg. One genitalia preparation preserved in glycerol in needle.

Distribution: Kazakhstan, Uzbekistan.

Scythis dicroa Falkovitsh, 1972

SW Kazakhstan, 42° 42' 26" N 54° 06' 20" E, 45 m, Akkuduk village 30 km S, Karynzharyk sands, Saksorka, 15-V-2011, 2 ♂♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 22" N 54° 39' 02" E, 90 m, Ustyurt Nature Reserve, Kendyrli, 19-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 43° 07' 07" N 54° 11' 33" E, 85 m, Akkuduk Village 20 km N, Karynzharyk sands, Tynyshtyk, 23-V-2011, 8 ♂♂, 3 ♀♀, K. Nupponen leg.; Kazakhstan, 46° 20' 21" N 59° 41' 49" E, 45 m, Aral Sea, N shore, Tamshima well, 30-V-2011, 2 ♀♀, K. Nupponen leg. Six genitalia preparations preserved in glycerol in needle.

Distribution: Kazakhstan, Uzbekistan.

Remark: The present records extend the known distribution range of *S. dicroa* considerably to the west. **New to Kazakhstan.**

Scythis fluxilis Falkovitsh, 1986

SW Kazakhstan, 42° 42' 26" N 54° 06' 20" E, 45 m, Akkuduk village 30 km S, Karynzharyk sands, Saksorka, 15-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 42° 36' 25-35" N 54° 08' 35-59" E, 0-47 m, Ustyurt Nature Reserve, Onere spring, 16-V-2011, 1 ♂, 17-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 22" N 54° 39' 02" E, 90 m, Ustyurt Nature Reserve, Kendyrli, 19-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 23" N 54° 41' 21" E, 115 m, Ustyurt Nature Reserve, Kendyrli, 20-V-2011, 1 ♂, K. Nupponen leg.; Kazakhstan, 43° 58' 21" N 68° 12' 34" E, 750 m, Karatau mts., Suyndyk river, Suzak settlement 28 km SW, 13-IX-2011, 1 ♂, K. Nupponen leg.; Kazakhstan, 42° 16' 52" N 67° 45' 23" E, 350 m, NE Kyzylkum desert, Kairaktau mt. range, Karamola mt., 17-IX-2011, 1 ♂, K. Nupponen leg. Four genitalia preparations preserved in glycerol in needle.

Distribution: Kazakhstan, Mongolia, Uzbekistan.

Remarks: The present records extend the known distribution range of *S. fluxilis* considerably to the west. **New to Kazakhstan.** The two specimens recorded in September indicate a second generation.

Scythis haloxylella Falkovitsh, 1969

SW Kazakhstan, 43° 07' 07" N 54° 11' 33" E, 85 m, Akkuduk Village 20 km N, Karynzharyk sands, Tynyshtyk, 23-V-2011, 4 ♂♂, K. Nupponen leg. One genitalia preparation preserved in glycerol in needle.

Distribution: Kazakhstan, Turkmenistan, Uzbekistan.

Scythis karvoneni Nupponen, 2010

SW Kazakhstan, 45° 30' 20" N 55° 17' 07" E, 110 m, Beineu town 18 km N, 28-V-2011, 1 ♂, K. Nupponen leg.; Kazakhstan, 46° 20' 21" N 59° 41' 49" E, 45 m, Aral Sea, N shore, Tamshima well, 30-V-2011, 4 ♂♂, 1 ♀, K. Nupponen leg.; Kazakhstan, 47° 37' 43" N 59° 31' 14" E, 190 m, N Barsuki desert, Chelkar settlement 25 km S, 2-VI-2011, 2 ♂♂, 3-VI-2011, 10 ♂♂, 5 ♀♀, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 1/9-I-2012 ♀. Five genitalia preparations preserved in glycerol in needle.

Distribution: Kazakhstan, Uzbekistan.

Remarks: The species is previously known only by the holotype from S Uzbekistan. **New to Kazakhstan.** The specimens from Kazakhstan are externally darker than the holotype, due to a widespread greyish suffusion on the forewings (Fig. 10). The previously unknown female genitalia of the species are illustrated and described below.

Female genitalia (Figs. 17-18): Sterigma long and narrow, straight; posterior half digitate, ending

in a sclerotized hood; anterior half narrower than posterior one, tip pointed; Ostium rather large, oval, situated at middle of sterigma. Sternum VII rectangular, 1.5 x wider than high; posterior margin slightly concave, with a small oval flap medially; sub-anteriorly a narrow transverse sclerotization. Tergum VII subquadrangular. Anterior margin of sternum VIII with a small laterally elongated flap. Apophyses anteriores 0.9 x length of apophyses posteriores.

Scythris lycii Falkovitsh, 1969

SW Kazakhstan, 42° 36' 25-35" N 54° 08' 35-59" E, 0-47 m, Ustyurt Nature Reserve, Onere spring, 17-V-2011, 8 ♂♂, 1 ♀, K. Nupponen leg.; SW Kazakhstan, 42° 57' 22" N 54° 39' 02" E, 90 m, Ustyurt Nature Reserve, Kendyrli, 19-V-2011, 1 ♂, K. Nupponen leg.

Distribution: Kazakhstan, Turkmenistan, Uzbekistan.

Remarks: **New to Kazakhstan.** The female of *S. lycii* is externally similar to the male, and rather easy to separate from other similar species by the dorsally pale yellow abdomen. The female genitalia were illustrated by NUPPONEN (2009) as *Scythris* sp.

Female genitalia (Fig. 19). Sterigma subrectangular, 1.5 x as high as wide, lateral and posterior margins widely sclerotized, posterior margin medially concave. Ostium situated at anterior 1/3 of sterigma. Sternum VII subquadrangular, posterior corners rounded; medioposteriorly with a semi-oval, weakly sclerotized process. Apophyses anteriores 0.65 x length of apophyses posteriores.

Scythris nielseni Passerin d'Entrèves & Roggero, 2004

SW Kazakhstan, 42° 57' 22" N 54° 39' 02" E, 90 m, Ustyurt Nature Reserve, Kendyrli, 19-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 43° 31' 00" N 51° 53' 20" E, 20 m, slopes by Karagie salt lake, 25-V-2011, 1 ♂, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 5/8-I-2012.

Other material studied: Israel, Jerusalem, Qiryat Anavim, 19-IV-1972, 1 ♂, P. Grotenfelt leg. Genitalia slide: K. Nupponen prep. no. 1/18-I-2006. In coll. Finnish Museum of Natural History, University of Helsinki.

Distribution: Afghanistan, Israel, Kazakhstan.

Remarks: **New to Kazakhstan and Israel.** The amount and size of sclerotized spines in the valvae is somewhat varying, as well as length of the medioposterior extension of the 8th sternal segment (Figs. 20-21). The external appearance of the moth is illustrated for the first time (Fig. 11).

Scythris obliqua Falkovitsh, 1969

SW Kazakhstan, 42° 36' 25-35" N 54° 08' 35-59" E, 0-47 m, Ustyurt Nature Reserve, Onere spring, 17-V-2011, 3 ♂♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 23" N 54° 41' 21" E, 115 m, Ustyurt Nature Reserve, Kendyrli, 18-V-2011, 1 ♂, 20-V-2011, 13 ♂♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 22" N 54° 39' 02" E, 90 m, Ustyurt Nature Reserve, Kendyrli, 19-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 43° 24' 27" N 54° 33' 34" E, 80 m, Ustyurt Nature Reserve, Mametkazgan, 22-V-2011, 20 ♂♂, 1 ♀, K. Nupponen leg.; SW Kazakhstan, 43° 07' 07" N 54° 11' 33" E, 85 m, Akkuduk Village 20 km N, Karynzharyk sands, Tynyshtyk, 23-V-2011, 8 ♂♂, 2 ♀♀, K. Nupponen leg.; Kazakhstan, 46° 20' 21" N 59° 41' 49" E, 45 m, Aral Sea, N shore, Tamshima well, 30-V-2011, 2 ♂♂, 2 ♀♀, K. Nupponen leg.; Kazakhstan, 46° 19' 53" N 59° 41' 36" E, 35 m, Aral Sea, dunes at N shore, Tamshima well, 31-V-2011, 1 ♂, K. Nupponen leg. Two genitalia preparations preserved in glycerol in needle.

Distribution: Kazakhstan, Mongolia, Uzbekistan.

Remarks: The present records extend the known distribution range of *S. obliqua* considerably to the west. **New to Kazakhstan.**

Scythris pallidella Passerin d'Entrèves & Roggero, 2006

W Kazakhstan, 47° 12' 02" N 55° 29' 13" E, 45 m, Emba river, Besbai village 2 km E, 11-V-2011, 2 ♂♂, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 2/8-I-2012.

Distribution: Kazakhstan, Mongolia, Uzbekistan, Tajikistan.

Remarks: New to Kazakhstan. The description of *S. pallidella* Passerin d'Entrèves & Roggero, 2006 is based on a single male specimen collected by Dr. Z. Kaszab in Mongolia. Later on, the species is reported also from Uzbekistan (NUPPONEN, 2009) and Tajikistan (PASSERIN d'ENTRÈVES & ROGGERO, 2010). The present specimens were discovered at the chalk slope by the River Emba in western Kazakhstan, over 3000 km to the west from the type locality (Fig. 5). The genitalia of the Kazakh specimens are similar to those of the holotype from Mongolia, with only minor differences in distal arm of the gnathos and posterior margin of sternum VIII (Figs. 22-23; see also PASSERIN d'ENTRÈVES & ROGGERO, 2006). The external appearance of the Kazakh specimens differs considerably from that of the holotype by distinct pattern on the forewings (Fig. 12). However, the differences in the genitalia are not sufficient to separate the Kazakh taxon as a bona species.

Scythris parafluxilis Passerin d'Entrèves & Roggero, 2007

W Kazakhstan, 47° 12' 02" N 55° 29' 13" E, 45 m, Emba river, Besbai village 2 km E, 11-V-2011, 1 ♂, K. Nupponen leg. Genitalia preparation preserved in glycerol in needle.

Distribution: Kazakhstan, Mongolia.

Remarks: The present record is the westernmost one known. The genitalia of the two Kazakh specimens known so far are identical. For further information of the taxon, see NUPPONEN (2011).

Scythris rotundella Nupponen, 2010

SW Kazakhstan, 45° 30' 20" N 55° 17' 07" E, 110 m, Beineu town 18 km N, 28-V-2011, 7 ♂♂, K. Nupponen leg.; Kazakhstan, 46° 20' 21" N 59° 41' 49" E, 45 m, Aral Sea, N shore, Tamshima well, 30-V-2011, 35 ♂♂, 4 ♀♀, K. Nupponen leg.; Kazakhstan, 46° 19' 53" N 59° 41' 36" E, 35 m, Aral Sea, dunes at N shore, Tamshima well, 31-V-2011, 1 ♀, K. Nupponen leg.; Kazakhstan, 46° 17' 13" N 58° 50' 35" E, 130 m, S Barsuki desert, near Bozoi village, 1-VI-2011, 3 ♂♂, K. Nupponen leg.; Kazakhstan, 47° 37' 43" N 59° 31' 14" E, 190 m, N Barsuki desert, Chelkar settlement 25 km S, 3-VI-2011, 3 ♂♂, K. Nupponen leg.; Kazakhstan, 47° 16' 36" N 61° 01' 07" E, 200 m, Saxaulsky village 20 km NW, Tynshokysu hills, 10-IX-2011, 1 ♀, K. Nupponen leg. Five genitalia preparations preserved in glycerol in needle.

Distribution: Kazakhstan, Uzbekistan.

Remark: A single specimen recorded in September indicates a second generation.

Scythris sachkovi Passerin d'Entrèves & Roggero, 2006

SW Kazakhstan, 43° 07' 07" N 54° 11' 33" E, 85 m, Akkuduk Village 20 km N, Karynzhyrk sands, Tynyshtyk, 23-V-2011, 2 ♂♂, 1 ♀, K. Nupponen leg. Genitalia slides: K. Nupponen prep. no. 3/8-I-2012 ♂, 3/9-I-2012 ♀.

Distribution: SW Kazakhstan, Mongolia.

Remarks: *S. sachkovi* is previously known only by the holotype from Central Mongolia. The present record is quite confusing, extending the distribution range of the species about 3500 km to the west. **New to Kazakhstan.** The habitat at the collecting site is a large sand dune area, surrounded by chalk slopes (Fig. 6). The previously unknown female genitalia of the species are illustrated and described below, and the external appearance of the moth is illustrated for the first time (Fig. 13).

Female genitalia (Fig. 24): Sterigma subrectangular, 1.5 x higher than wide, lateral margins slightly convex, anterior margin deeply and widely incised; ostium situated medially at basal 0.3 of incision. Sternum VII rectangular, 1.6 x wider than high; posterior margin shallowly concave, medially a V-shaped incision and a round membranous structure. Apophyses anteriores 0.75 x length of apophyses posteriores.

Scythris salinella Nupponen, 2011

Kazakhstan, 42° 16' 52" N 67° 45' 23" E, 350 m, NE Kyzylkum desert, Kairaktau mt. range,

Karamola mt., 17-IX-2011, 3 ♂♂, 2 ♀♀, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 2/9-I-2012 ♀. One genitalia preparation ♂ preserved in glycerol in needle.

Distribution: Kazakhstan.

Remarks: The species is previously known only by the holotype from SW Kazakhstan. The previously unknown female genitalia of the species are illustrated and described below.

Female genitalia (Figs. 25-26): Sterigma conical, medially with a triangular structure, anteriorly attached to a sclerotized anterior margin of sternum VIII, which is arched from middle to both lateral directions. Ductus bursae posteriorly wrinkled. Sternum 7 membranous, subrectangular, 1.8 x wider than high; posterior margin deeply incised. Apophyses posteriores long, apophyses anteriores reduced.

Scythris tsherkessella Falkovitsh, 1969

SW Kazakhstan, 42° 36' 25-35" N 54° 08' 35-59" E, 0-47 m, Ustyurt Nature Reserve, Onere spring, 17-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 42° 57' 23" N 54° 41' 21" E, 115 m, Ustyurt Nature Reserve, Kendyrli, 18-V-2011, 12 ♂♂, 3 ♀♀, 20-V-2011, 118 ♂♂, 3 ♀♀, K. Nupponen leg.; SW Kazakhstan, 42° 57' 22" N 54° 39' 02" E, 90 m, Ustyurt Nature Reserve, Kendyrli, 19-V-2011, 10 ♂♂, K. Nupponen leg.; SW Kazakhstan, 43° 07' 07" N 54° 11' 33" E, 85 m, Akkuduk Village 20 km N, Karynzhyrlyk sands, Tynyshtyk, 23-V-2011, 2 ♂♂, K. Nupponen leg.; SW Kazakhstan, 43° 24' 27" N 54° 33' 34" E, 80 m, Ustyurt Nature Reserve, Mametkazgan, 22-V-2011, 7 ♂♂, 6 ♀♀, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 2/30-I-2012 (♀). Five genitalia preparations preserved in glycerol in needle.

Distribution: Kazakhstan, Mongolia, Turkmenistan, Uzbekistan.

Scythris tytrella Falkovitsh, 1969

SW Kazakhstan, 42° 56' 54" N 54° 05' 35" E, 75 m, Karynzhyrlyk sands near Akkuduk village, 14-V-2011, 1 ♂, K. Nupponen leg.; SW Kazakhstan, 42° 42' 26" N 54° 06' 20" E, 45 m, Akkuduk village 30 km S, Karynzhyrlyk sands, Saksorka, 15-V-2011, 3 ♂♂, 1 ♀, K. Nupponen leg.; SW Kazakhstan, 42° 36' 25-35" N 54° 08' 35-59" E, 0-47 m, Ustyurt Nature Reserve, Onere spring, 16-V-2011, 36 ♂♂, 28 ♀♀, 17-V-2011, 129 ♂♂, 85 ♀♀, K. Nupponen leg.; SW Kazakhstan, 43° 48' 45" N 53° 31' 29" E, 70 m, Sengirkum sands, Terekurpa well, 27-V-2011, 2 ♂♂, K. Nupponen leg. Five genitalia preparations preserved in glycerol in needle.

Distribution: Kazakhstan, Uzbekistan.

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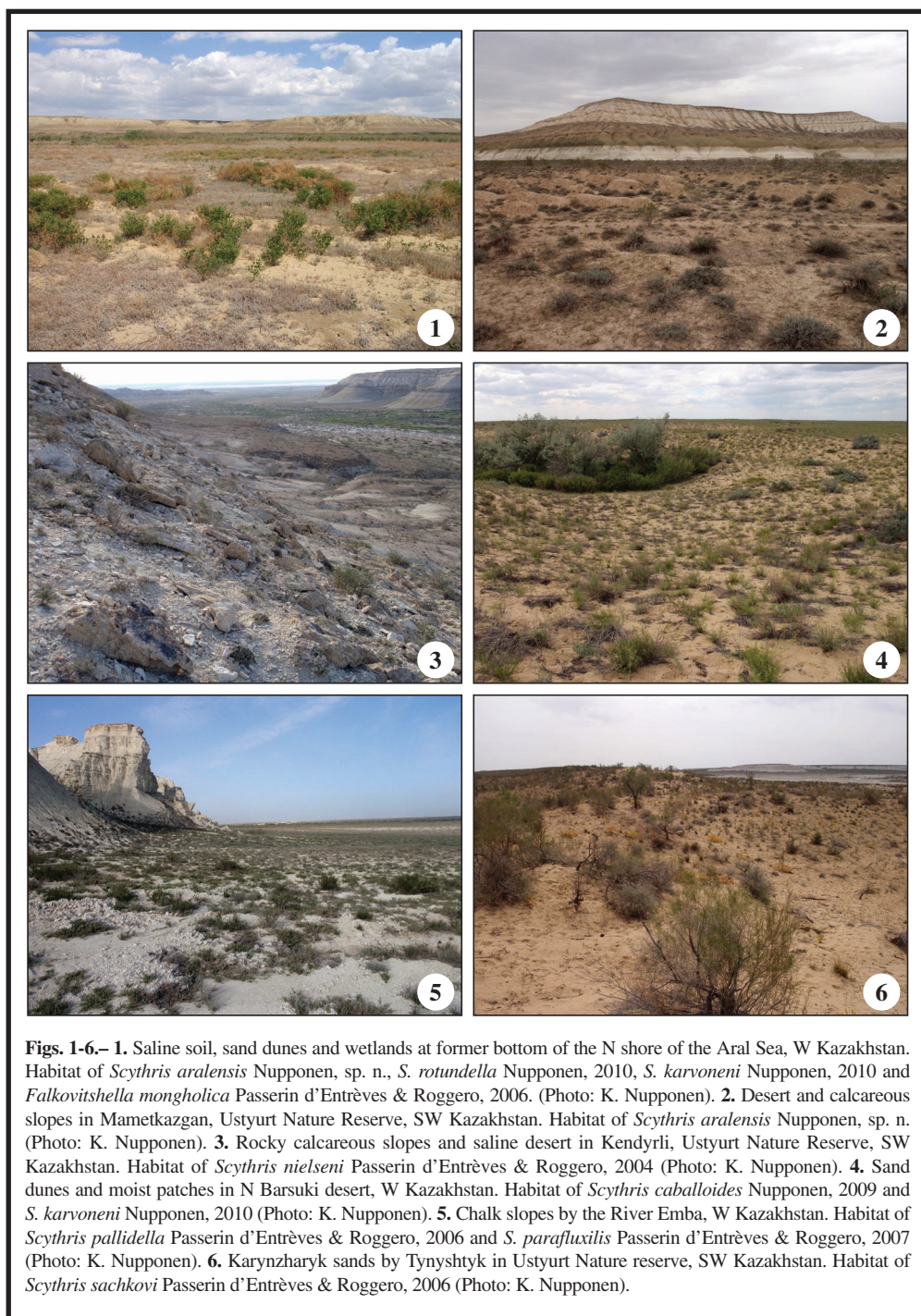
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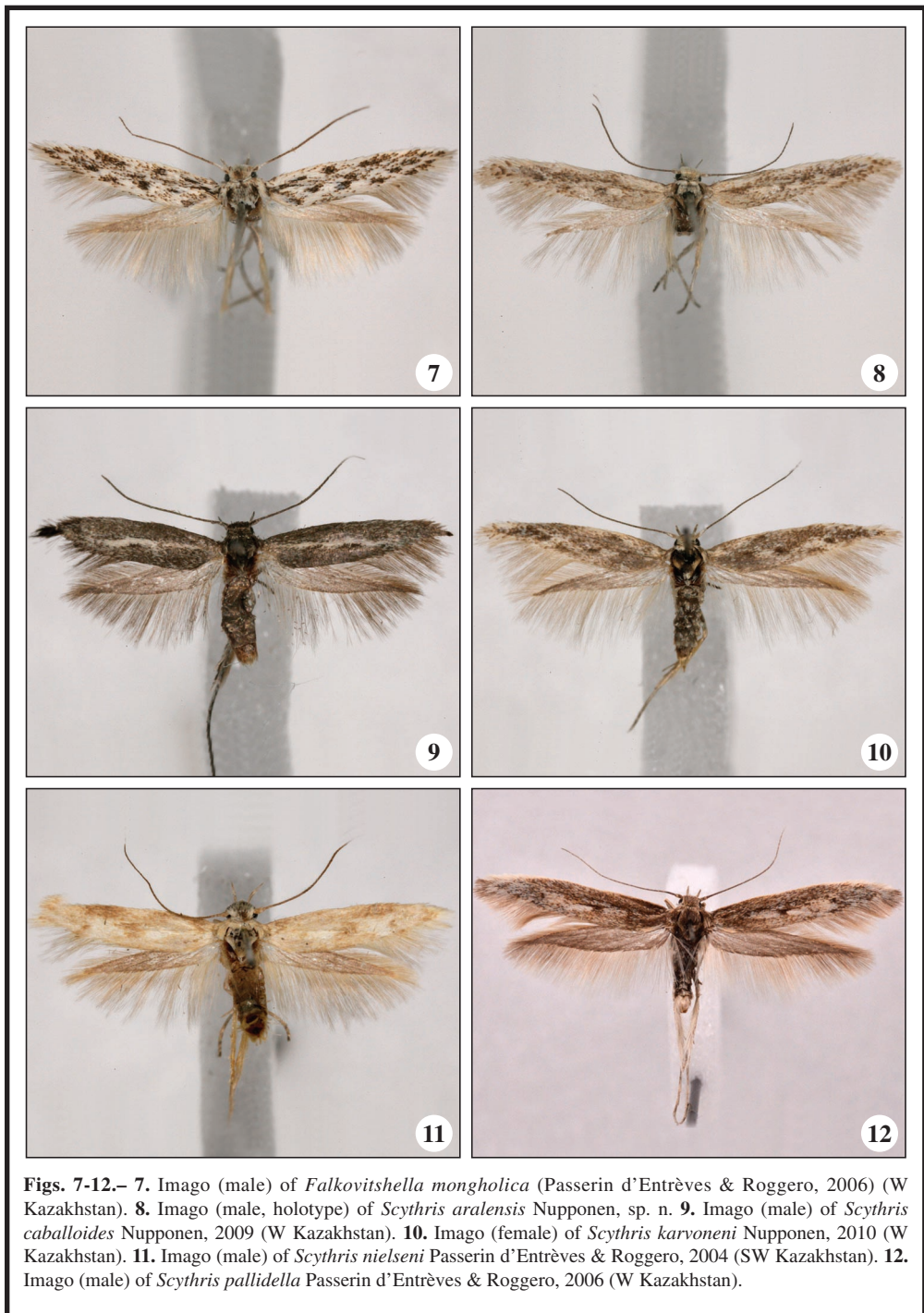
K. N.
Merenneidontie, 19 D
FI-02320 Espoo
FINLANDIA / FINLAND
E-mail: Kari.Nupponen@kolumbus.fi

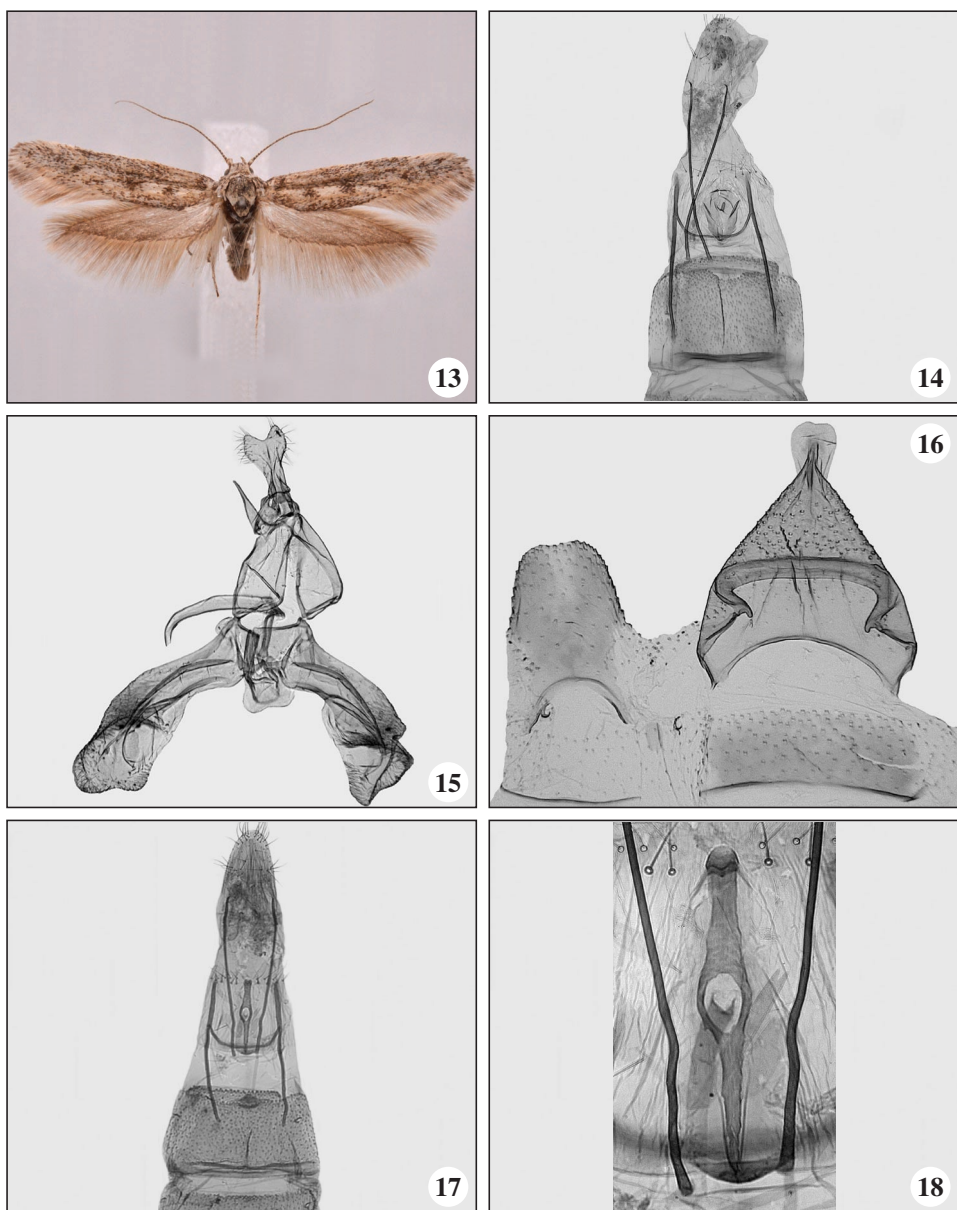
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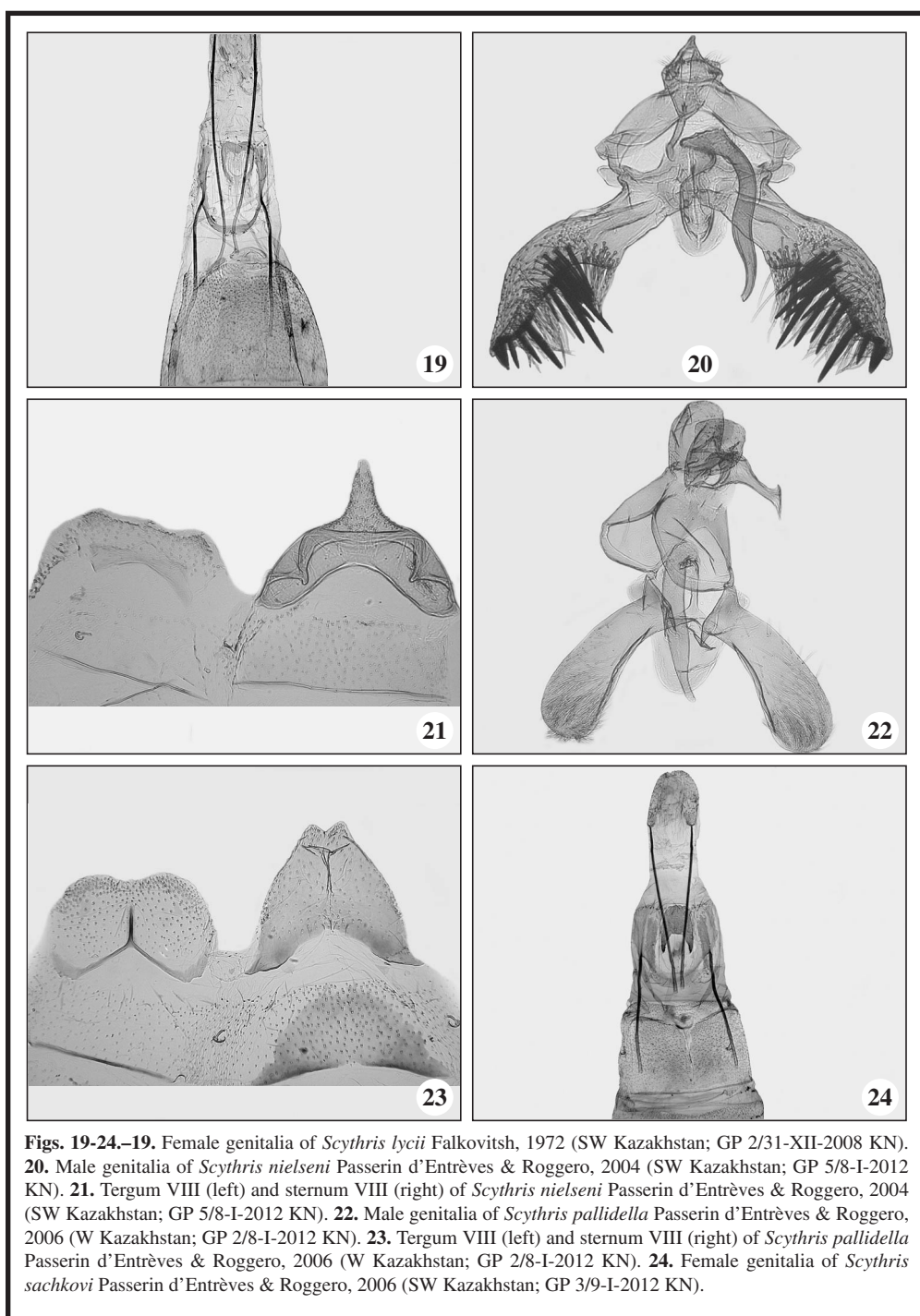
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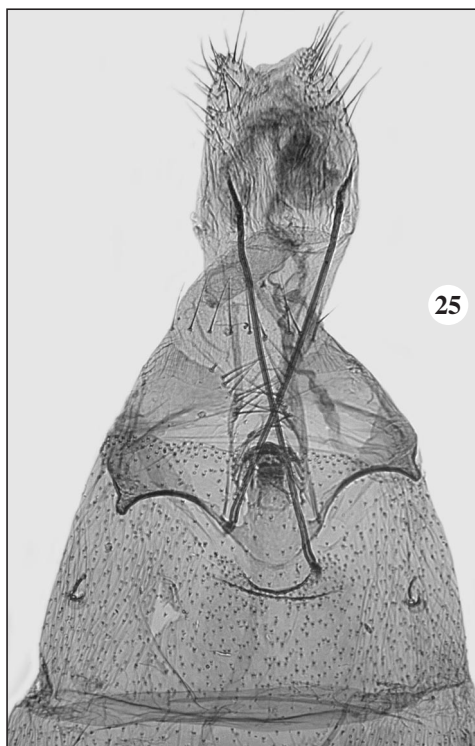






Figs. 13-18.—13. Imago (male) of *Scythris sachkovi* Passerin d'Entrèves & Roggero, 2006 (SW Kazakhstan). 14. Female genitalia of *Falkovitshellia mongholica* (Passerin d'Entrèves & Roggero, 2006) (W Kazakhstan; GP 3/30-I-2012 KN). 15. Male genitalia of *Scythris aralensis* Nupponen, sp. n. (holotype; GP 1/30-I-2012 KN). 16. Tergum VIII (left) and sternum VIII (right) of *Scythris aralensis* Nupponen, sp. n. (holotype; GP 1/30-I-2012 KN). 17. Female genitalia of *Scythris karvoneni* Nupponen, 2010 (W Kazakhstan; GP 1/9-I-2012 KN). 18. Sterigma of *Scythris karvoneni* Nupponen, 2010 (W Kazakhstan; GP 1/9-I-2012 KN).





Figs. 25-26.—25. Female genitalia of *Scythris salinella* Nupponen, 2011 (S Kazakhstan; GP 2/9-I-2012 KN). 26. Sterigma of *Scythris salinella* Nupponen, 2011 (S Kazakhstan; GP 2/9-I-2012 KN).